



# Central Valley Clean Water Association

*Representing Over Sixty Wastewater Agencies*

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August 23, 2010

*Submitted Via Electronic Mail*

Mr. Cliff Raley  
Regional Water Quality Control Board,  
Central Valley Region  
11020 Sun Center Drive, Suite 200  
Rancho Cordova, CA 95670  
[ceraley@waterboards.ca.gov](mailto:ceraley@waterboards.ca.gov)

**Re: Comments on the Tentative Waste Discharge Requirements for the City of Auburn Wastewater Treatment Plant**

Dear Mr. Raley:

The Central Valley Clean Water Association (CVCWA) submits these comments on the tentative waste discharge requirements for the City of Auburn (City) Wastewater Treatment Plant (Tentative Order). CVCWA is a non-profit organization that represents its members in regulatory matters affecting surface water discharge and land application with a perspective to balance environmental and economic interests consistent with applicable law. Accordingly, the criteria used to determine the final effluent limitations for aluminum in the Tentative Order are of significant interest to CVCWA's members. We respectfully request that the Central Valley Regional Water Quality Control Board (Regional Water Board) adopt Alternative No. 1 to the Tentative Order.

To implement the basin plan's narrative toxicity objective, the Tentative Order proposes final effluent limitations for aluminum of 70 micrograms per liter ( $\mu\text{g/L}$ ) as an average monthly limitation and 146  $\mu\text{g/L}$  as a maximum daily limitation. (Tentative Order at p. 10.) The basis for these effluent limitations is the United States Environmental Protection Agency's (USEPA) recommended 4-day average chronic criterion of 87  $\mu\text{g/L}$  for the protection of freshwater aquatic life. (*Id.* at pp. F-33 to F-34.) Instead of the chronic criterion, Alternative No. 1 to the Tentative

Order applies USEPA's recommended acute aluminum criterion of 750 µg/L and the Department of Public Health's Secondary Maximum Contaminant Level (MCL) of 200 µg/L. (Alternative No. 1 at p. 1.) Alternative No. 1 would result in a final effluent limitation for aluminum of 200 µg/L as an annual average per calendar year and be protective of beneficial uses and the receiving waters. (*Ibid.*)

Application of the acute aluminum criterion as provided in Alternative No. 1 is appropriate for the receiving water conditions. USEPA considers the chronic criterion of 87 µg/L necessary to protect receiving waters that concurrently experience low hardness (10-50 milligrams per liter (mg/L) as CaCO<sub>3</sub>) and pH (6.5-6.6). For receiving waters that do not experience such conditions, USEPA indicates that the aluminum criterion of 750 µg/L is protective of aquatic life. The 750 µg/L criterion should apply to the receiving water at and downstream of the City's discharge. The upstream receiving waters hardness is between 10 mg/L and 110 mg/L as CaCO<sub>3</sub>, and the lowest measured effluent hardness is 70 mg/L as CaCO<sub>3</sub>. (Alternative No. 1 at p. 3.) Therefore, the downstream receiving water hardness would generally be above 50 mg/L as CaCO<sub>3</sub>. The effluent hardness increases the downstream hardness, and thus the downstream receiving water hardness supports that the 87 µg/L is not applicable to this waterbody (*Ibid.*)

Further, a recent study, the Water Quality Research Project's report titled *Evaluation of the EPA Recalculation Procedure in the Arid West Technical Report*<sup>1</sup> (AWWQRP, 2006) was intended to update the NAWQC chronic aluminum criterion based on more recent data. This study (Arid West Study) included an updated technical review of the aluminum toxicity literature and found that aluminum toxicity is highly dependent on ambient water quality and, in particular, ambient hardness concentrations. The Arid West Study conducted a literature review of 15 studies including 36 acute toxicity data points and 9 studies including 11 chronic toxicity data points. Based on this research, the Arid West Study recommended the updated aluminum criteria shown in **Table 1**. However, the Arid West Study only modeled hardness concentration values up to 220 mg/L, so criteria based on hardness concentration values greater than 200 mg/L represent some uncertainty.

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<sup>1</sup> Arid West Water Quality Research Project (AWWQRP). 2006. *Evaluation of the EPA Recalculation Procedure in the Arid West Technical Report*. Parametrix Inc. Albany, Oregon. Chadwick Ecological Consultants, Littleton, Colorado. URS Corporation, Albuquerque, New Mexico.

**Table 1. Updated Chronic Aluminum Criteria Values across Selected Hardness Concentration Values**

Mean Receiving Water Hardness Concentration (mg/L as CaCO <sub>3</sub> )	25	50	75	100	150	200	250	300	350	400
Chronic Al Criteria (µg/L) <sup>1</sup>	287	512	717	911	1,277	1,623	1,954	2,275	2,586	2,890

1.  $e^{(0.8327[\ln(\text{hardness})] + 2.9800)}$

Using this approach, the chronic aluminum criterion is calculated to be significantly higher than 87 µg/L even at lower hardness. A hardness range of 10 mg/L -110 mg/L would correspond to a chronic aluminum criteria ranging from 134 µg/L to 986 µg/L.

The Tentative Order requires the City to monitor hardness monthly and includes a reopener provision allowing for a permit modification when new information becomes available to justify different permit conditions. (Tentative Order. at pp. 19, E-6, E-11.) Monitoring data that demonstrate a reduction in effluent hardness would constitute new information. Accordingly, if and when it becomes appropriate to modify the permit based on different criteria, the Regional Water Board may do so. Until then, the Regional Water Board should implement Alternative No. 1.

CVCWA appreciates your consideration of these comments and respectfully requests that the Regional Water Quality Control Board adopt Alternative No. 1 to the Tentative Order. If you have any questions or we can be of further assistance, please contact me at (530) 268-1338.

Sincerely,



Debbie Webster  
Executive Officer

cc: Bernie Schroeder, City of Auburn (email)  
Pamela Creedon, Central Valley Regional Water Quality Control Board (email)